To summarize, legitimate consumers who own VideoCipher II descramblers to_ay wil. not los acce__ _o _ny programming which is currently scrambled or which has plans to scramble. They will notice no difference in their service when the Plus system is introduced and will suffer no inconvenience. Claims that the VCII will become obsolete are simply unfounded.

I am also enclosing a copy of the SBCA's most recent scrambling facts showing current packages and pricing for home satellite consumers.

Please feel free to contact me if I can answer any questions regarding the VideoCipher II Plus situation or regarding satellite television generally.

Thank you for your attention and concern.

GENERAL INSTRUMENT UNVEILS VIDEOCIPHER II PLUS INTRODUCTION DESIGNED TO REVITALIZE THE HOME TVRO INDUSTRY

VideoCipher® II Plus Purpose

- Introduce a significantly higher security descrambler module into consumer market as soon as practical with minimal disruption to each segment of the industry.

- Eliminate fear of product obsolescence for existing and new TVRO system owners.

VCII Plus Descrambler Module Definition

- Identical package as current VCIIM. Backwards compatible. Security cartridge eliminated from initial VCII Plus introduction and held in reserve as a security measure if needed at a later date. Licensees still encouraged to redesign IRD rear panel for this potential future security enhancement.

New Features

- Capable of receiving up to 256 program tiers, descrambling 3 encrypted data channels and multiple audio channels (support for additional features to be phased in over time). Has expanded on-screen displays and increased addressing rate.

VCII Plus Production

- Licensees placed large confirmed orders for VCII modules and now have requested delivery delays. In an attempt to accommodate these requests, 1989 VCII production will be cut back, at significant cost to GI, to a fixed number of modules. No VCII modules will be manufactured after 12/31/89.

- Begin production of VCII Plus modules on schedule in late September and ramp up to 100% of production output by January 1990.

- Institute Order Conversion Plan which offers Licensees opportunity to adjust open orders to more closely match forecasted demand and apply for allocation of initial VCII Plus modules during ramp up.

- New orders for VCII Plus modules will be at OEM list price of $249 beginning 1/1/90. As promised, as a special industry promotion, initial limited quantities of VCII Plus modules during October-December ramp up will be offered at current VCII price. The marketplace will determine retail prices of both VCII and VCII Plus systems during transition period. Fifteen dollars ($15) of every new VCII Plus module ordered under the $249 price schedule and shipped between 1/1/90 and 4/30/90 will be contributed toward SBCA-administered industry promotion campaign (excludes VCII Plus modules shipped under Consumer Upgrade Plan below). Potential campaign in excess of $1 Million.

VCII Plus Upgrade Plan

only untampered undamaged VCII (handwritten annotation)

- Legitimate VCII descrambler or IRD owner, Distributor or Dealer can trade-in an untampered, undamaged VCII module with a $129 upgrade charge and receive in exchange a new VCII Plus module beginning 4/1/90. Eliminates fear of obsolescence among existing consumers who helped build the industry and new system purchasers by offering an upgrade should new programming appear on expanded upper tier bits.

- Licensee may trade-in untampered, undamaged VCII modules with a $129 upgrade charge for each module in exchange for an equal quantity of new VCII Plus modules.

- VMSD Dealers may participate in upgrade program.

VCII Plus Tier Bit Marketing Plan

- As previously stated, we have no plans to allow current subscription services to abandon VCII lower tier bit in favor of new VCII Plus upper tier bit.

- VCII Plus technology provides for potential growth of new subscription services if they choose to serve HTVRO market through new upper tier bits.

- Encrypted data and audio channel capability will be marketed in the future to providers of these services.

Benefits of VCII Plus Introduction Program

- Timely introduction of higher security.
- Reduce consumer confusion over new product
- Maintain positive sales and growth through transition period
- Protect Consumer, Dealer, Distributor, Licensee against perceived descrambler obsolescence with Order Conversion and Consumer Upgrade programs.
- Major industry promotion campaign in excess of $1 Million.
- Provides additional features and channel expansion value to home TVRO system.

To summarize, legitimate consumers who own VideoCipher II descramblers today will not lose access to any programming which is currently scrambled or which has plans to scramble. They will notice no difference in their service when the Plus system is introduced and will suffer no inconvenience. Claims that the VCII will become obsolete are simply unfounded.

I am also enclosing a copy of the SBCA's most recent scrambling facts showing current packages and pricing for home satellite consumers.

Please feel free to contact me if I can answer any questions regarding the VideoCipher II Plus situation or regarding satellite television generally.

Thank you for your attention and concern.

Satellite Broadcasting and Communications Association
of America

The following is a summary of statements received by the SBCA from General Instrument and programmers regarding the VideoCipher II and VideoCipher II Plus:

1. "General Instrument stands firmly behind its commitments announced in September, 1988 that current owners of VideoCipher II (r) descramblers will not be stranded with obsolete descramblers when the second generation VideoCipher II - Plus (r) descrambling system is introduced in Fall 1989."

   - Larry Dunham, President, General Instrument Corp. VideoCipher Division 2/15/89.

2. "Q.   Aren't the 40 programmers now on VideoCipher II tier bits going to move to (the higher tier bits) when VideoCipher II Plus comes to market?

   A.   Absolutely not. We have no intention of allowing existing subscription programming services to transfer to tier bits above the existing 56."

   General Instrument's <u>Inside TVRO</u> newsletter, November 1988.

3. "PrimeTime 24 is in the business of serving customers. We have every expectation of using VCII now and in the future. We and all responsible programmers will, I'm sure, work with GI to ensure that every legitimate VCII owner is treated fairly in the future and that their investment in their VCII equipment is protected. We can only speculate that the attacks on VCII Plus are motivated by the desire of some pirates to perpetuate piracy."

   - Kazie Metzger, President, PrimeTime 24 2/23/89.

4. "I can state, without equivocation, that consumers who own legitimate VCII's today will continue to be able to receive Netlink's programming after the introduction of the VCII Plus. The introduction of the Plus will have no impact on our existing customers...It defies all logic to think that any programmer would abandon or inconvenience those customers in any way.

Those who are claiming that the VCII Plus will obsolete the existing VCII and cause consumers to buy new equipment are wrong and simply ignoring the facts. Whether they are doing this to undermine the recovery of the industry or simply to line their own pockets, I do not know."

- Brian McCauley, President, Netlink 2/27/89

5. "SHOWTIME SATELLITE NETWORKS, INC. (SSN) continues to support General Instrument's VideoCipher decoder as the "de facto" encryption standard for the home TVRO industry...any plan that would unfairly disenfranchise legitimate paying home TVRO subscribers would be a setback to the continued success of the home satellite industry. SSN would oppose any such plan."

- Stephan Schulte, Exec. Vice President, SSN, 2/17/89.

6. "We believe the (VideoCipher) technology needs to be upgraded so that it will work and we hope the VCII Plus system will provide the secure system we need.

On the other hand, we are equally concerned about our customers who have purchased expensive VCII equipment and are not responsible for its shortcomings. Please be assured that we are just as concerned about our customers as we are about signal security and believe that it is GI's obligation to provide the industry with a secure delivery system without imposing added cost or undue inconvenience on our customers.

We have no intention of participating in a solution to our signal security problem which burdens our customers."

- Douglas R. McGinnis, Div. V.P., Turner Cable Network Sales, Inc. 2/16/89

7. "We agree that this so called report (issued by United TVRO) contains many inaccuracies and unfortunately represents negative rhetoric, the likes of which is not good for any segment of the industry.

   ...Today, TVRO represents a significant business for HBO Inc. and we continue to be dedicated to its further expansion. Since this is a subscription business, its growth will come through the acquisition of new subscribers as well as the renewal of our services from hundreds of thousands of valuable HBO/Cinemax customers who own VideoCipher IIs. We support the SBCA actions to counter this campaign of false publicity."

   - Robert N. Caird, V.P. Direct Broadcast, Home Box Office, Inc. 2//15/89.

8. "In response to media of the contrary, Eastern Microwave intends to offer continued availability of its WWOR-NY and WSBK-Boston signals to current legitimate VCII owners following the introduction of the VCII Plus."

   - Susan M. Moliski, Manager Direct Broadcast Satellite, Eastern Microwave, Inc. 2/15/89.

9. "I hope the SBCA has a plan to stop United TVRO's blatant attempt to rip off the TVRO consumer with this thinly veiled plan to accept donations to stop the VCII Plus.

   It is incredible to me that anyone would think a programmer is going to abandon their current customer base and restrict their new sales universe to high-end hardware purchases. We all want to take advantage of the increased signal protection of VCII Plus, however, change in tier bits is not required to do so.

   The best part of the TVRO industry is the 400,000 plus honest consumers that won't buy stolen property. Signal theft is a problem, but Satellite Sports Networks will never accept a solution that prevents us from fulfilling our promise to deliver sports programming to our honest subscribers, using their current equipment (and nobody can make us do that).

   We have had several inquiries from customers and potential buyers regarding the VCII Plus issue and we have done our best to eliminate their concerns. We hope the SBCA will take an assertive role in combating these alarmist consumer groups.

Please take my vote for business as usual. Let's hope this non issue of VCII Plus will go away."

- Glenn Gurgiolo, Vice President/General Manager, Satellite Sports Networks, 2/16/89.

10. "The Superstar Connection has a commitment to the hundreds of thousands of home satellite dish consumers subscribing to our services. That commitment is part of our business philosophy and is underscored by our "Customer Care" program in which customer satisfaction is the foremost objective. To suggest that we might willingly abandon these consumers, by moving our services to an unaccessible tier bit, is blatantly absurd."

- Jack Riley, Vice President, Superstar Connection 3/1/89.

February 28, 1989

REPORT TO: MEMBERS OF CONGRESS

The successful development of the home satellite television industry is a matter of significant interest to consumers and the businesses which developed as a result of its emergence.
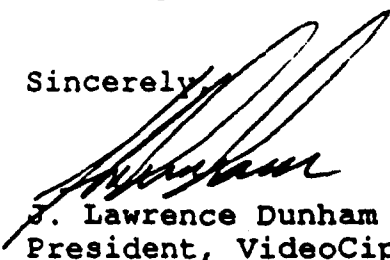
It is also of significant interest to the Congress, which recognized the scrambling of satellite television signals in legislation in 1984 and which enacted legislation in 1988 to assist continuing growth in programming services and to deter the theft of such programming.

As a major participant in the development of the home satellite television industry, General Instrument Corporation has, in memorandum and in testimony to the Congress, periodically reported on developments of interest to the industry.

Attached is a report with an emphasis on developments in scrambling systems and equipment, particularly the VideoCipher II system. This technology has become, and remains even with enhancements, the de facto standard for the scrambling of home satellite television.

Should you have any questions, please contact our office at (202) 833-9700.

Sincerely,

J. Lawrence Dunham
President, VideoCipher Division
General Instrument Corporation

[handwritten notes:] Mr. Dunham has here in writing VideoCipher II de facto standard "ling of satellite

[handwritten note:] The VideoCipher II plus is not the defacto standard because

THE DRAMATIC GROWTH OF THE INDUSTRY

HBO was the first of the major programmers to scramble its satellite transmissions, in January 1986. That date marks the beginning of the industry because, prior to then, programmers and copyright owners had no practical way to receive payment for the viewing of their satellite transmissions.

Since January 1986, the TVRO industry has developed rapidly and sometimes in unforeseen ways. While most of the developments have been positive, some have not, most notably the ability of satellite signal thieves to steal the signal. Often called "satellite pirates," they established an underground industry which has defrauded consumers and programmers, put the legitimate industry to great expense, and harmed honest satellite dealers with their unfair competition.

Since January 1986, highlights of the emerging home satellite television industry:

- Forty-eight services, including pay television programs, basic cable programs, pay-per-view services, and regional sports networks, have begun to scramble using the VideoCipher system. Four more programmers have announced their intention to scramble.

- In January 1986, when scrambling first began, many of these programming services did not even exist. For example, of the twenty-seven pay programmers, ten are brand new businesses made possible by the successful implementation of scrambling.

- Over 128 uplink scramblers have been successfully installed.

- Over 215,000 commercial descramblers have been produced and shipped to cable television and SMATV affiliates.

- A DBS authorization center has been made fully operational and linked to sixteen programmer billing systems.

- Almost 650,000 consumer descramblers, at one time, have been authorized for service.

- Twenty-one manufacturers of satellite receivers have been licensed to include VideoCipher descramblers in their integrated receiver/descrambler (IRD) units. In addition, eight manufacturers have been licensed to include VideoCipher descramblers in their commercial descrambler products (for cable and SMATV systems).

- A satellite television pay-per-view industry has emerged to bring special event programming to the backyard dish market.

- Programmers have experienced incremental revenues which are now $10 million per month and growing at a rate to 6% per month. They have experienced a 30% increase in their commercial affiliates. These increased revenues not only provide funds which are available for new programming; they also put to rest the notion that programmers do not want to serve the backyard dish market.

This is a truly remarkable story of an industry springing into existence in a short period of time.

Regrettably, this rapid growth has brought with it problems, primarily periodic shortages and the emergence of a black market in descramblers modified to permit theft of the satellite signal. Even here, however, there are hopeful signs.

- In the summer of 1987, the industry experienced a shortage of consumer descramblers, brought on by an unusually high level of orders. In addition to demand generated by the

rapid roll-out of scrambling, demand was fueled by a perception that the earliest generation of descramblers was more susceptible to piracy. That shortage evaporated as additional manufacturing capability was brought on line.

- While manufacturing capacity is more than adequate to meet anticipated demand, piracy continues to create volatility in orders. Heavy order input is again being experienced from some quarters, partly in anticipation of the security effectiveness of advances in the VideoCipher system and product.

- The tide appears to have turned against signal theft. In the four month period beginning October 1, 1988, when shipments of VideoCipher II modules with new firmware (called "dash-7") began, the ratio of new monthly subscriptions to General Instrument's monthly descrambler shipments stood at 90%, compared to 50% for the first nine months of 1988. In addition, the impact of expanded Federal and state law enforcement agencies and the increased Federal penalties for piracy are producing positive results.

- Industry commitment is growing. Under the auspices of the Satellite Broadcasting & Communications Association, an Anti-Piracy Task Force has been organized with five full-time employees backed by commitments of $2 million in resources contributed. Significant support is being provided by groups with experience in combating piracy, including the Motion Picture Association of America and the National Cable Television Association.

- Also under the auspices of the SBCA, the industry is organizing to research and propose programs to market satellite systems and prepare for the long-range growth of the industry.

This growth and these changes are a dramatic example of the marketplace generating new businesses and new jobs to utilize a technological development.

INTRODUCTION OF THE VIDEOCIPHER II PLUS

To ensure continued market growth, and to provide a more effective way to combat signal theft, General Instrument has continued to improve the VideoCipher system. While such improvements have been ongoing since the system's introduction, including several changes in software and firmware, the VideoCipher II Plus system and equipment represent a major step forward.

The VideoCipher II Plus system and equipment first announced last September, is designed to offer additional capacity for home satellite TV subscribers, expanded capacity for programming delivery, and advanced system security.

Since September, General Instrument has conducted a series of meetings with the leaders of major industry segments and with our customers -- including consumers, dealers, distributors, our second source manufacturer, and licensed manufacturers. Over the past five months, several key announcements have been made regarding implementation of VideoCipher II Plus.

These decisions, which have been well received by the satellite TV industry, include:

- VideoCipher II Plus modules are scheduled for shipment in the Fall of 1989. Among the features of the Plus modules, two deserve mention.

    - The Plus modules will include a new VLSI microprocessor which incorporates into one unit the features of several of the security microprocessors in the current modules. We believe that this will bring a significant enhancement in the security of the unit while raising the barriers to satellite pirates and thieves.

- The Plus modules will consist of two separate units, unlike current VideoCipher II modules in which all functions are combined in one unit. Plus modules will consist of a Support Module, containing all the support electronics but not the security electronics, and a Security Cartridge, which contains the security electronics and which can be inserted into the Support Module.

- Current VideoCipher II descramblers will not be made obsolete by the introduction of VideoCipher II Plus. Consumers who currently own legitimate, unmodified descramblers will continue to be able to receive programming and programming packages just as they do now. VideoCipher II Plus does dramatically enhance the capacity of the system to carry new programming and new programming configurations. But General Instrument and the programmers have repeatedly stated that the current owners of VideoCipher II descramblers will not be abandoned.

- For those consumers who insist on upgrading their current units to VideoCipher II Plus, upgrades will be available at reasonable cost. For the foreseeable future, consumers may be motivated to obtain the additional data channel which VideoCipher II Plus includes or to have the Plus capability for more convenient Pay-Per-View programming.

- VideoCipher II Plus is an enhancement of the current VideoCipher II system and will be provided to General Instrument's current twenty-one manufacturing licensees for inclusion in their integrated receiver/descramblers (IRDs) under the terms of their current contracts.

- The VideoCipher II Plus Support Module is the same size and shape with the same electrical connectors as the current VideoCipher II module. IRD manufacturers/licensees will not have to retool their products. This will insure continued market stability. A program will be instituted so that licensee/manufacturers can supply the support module electronics themselves, if they wish.

- The introductory price of VideoCipher II Plus modules will be the same as the current price for VideoCipher II modules.

These are the main features of the VideoCipher II Plus program, which have been well publicized and widely accepted within the industry. If you have any additional questions, please contact us at (202) 833-9700 and we will endeavor to answer your questions and any concerns you might have.

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At left, Larry Crawford, California Amplifier Inc.'s director of engineering (middle, standing) answers questions during the company's Dec. 3 open house. Below, Cal-Amp's "All American System."

Business News, Dec. 12, 1990, p. 1).

Now, according to a number of industry executives, a new round of talks has begun, centering on the options Hughes and Comsat have as a result of the failed negotiations. A major player in the discussion has become the VideoCipher Division of Forstmann Little & Co.'s General Instrument Corp. (GI). GI is developing a video compression technology, called DigiCipher, and is widely known to be interested in participating in a DBS venture,

sources said, visited GI's San Diego offices on Dec. 17 to discuss DBS and DigiCipher. According to sources, GI and Comsat are holding discussions on Comsat's use of DigiCipher as well as a possible joint DBS venture primarily funded by the two companies. Comsat holds an option on six transponders aboard Hughes' SBS-6 medium-powered Ku-band satellite.

Wussler and VideoCipher Division President Larry Dunham both declined to comment on the discussions.

Asked if GI was interested

GI Finalizing VC II Plus Upgrade, Warranty Plans

By Bob Scherman

The VideoCipher Division of Forstmann Little & Co.'s General Instrument Corp. (GI) is close to finalizing a number of major decisions regarding plans to upgrade legitimate VC II subscribers to the VC II Plus system and the deactivation of the VC II data authorization stream.

In an interview earlier this month, division President Larry Dunham and Vice President of Sales and Marketing Michael Meltzer outlined the current status of their plans and confirmed several points which have already been reported (See *Satellite Business News*, Nov. 28, 1990, p. 1; Oct. 3, 1990, p. 1; and Sept. 5, 1990, p. 1).

Among the key points:

● Production of the VC II Plus configured to accept a smart card authorization link is scheduled to begin late next summer with substantial quantities being available in the first quarter of 1992. Known as a CipherCard based module (CCWM), the units are designed to have their security easily updated through insertion of a new CipherCard rather than a module replacement.

● It will take six to 12 months to provide free CCWM modules to all VCII owners who subscribe to programming and GI is working with industry companies to determine ... *continued on page 28*

Return Policy on Modified VideoCipher IIs Debated

VC II Plus

when the bulk of the upgrades should take place in order to least disrupt TVRO sales.

●The initial version of the CCBM will not contain a CipherCard and will function much like current VC II Plus units. The CipherCard will be distributed only if the VC II Plus' security has to be upgraded. There are no plans to upgrade current owners of VC II Plus modules to CCBMs and such a move will only occur if a security upgrade is necessary.

●Contrary to a letter from a GI sales manager being circulated, GI and the programmers have set no definitive date for the termination of the VC II data authorization stream. In fact, GI and the programmers are strongly considering a plan whereby the VC II data stream would be eliminated from certain channels first and then entirely eliminated. GI does not believe the claim by hackers that they will be able to steal all programming as long as the VC II data stream exists on one

channel, but Dunham said GI is conducting further research on the question. Executives said GI is working closely with Home Box Office and Show-time on the gradual phase-out plan, with the most-talked-about scenario involving a simultaneous elimination of the data stream from both services.

●A key element in the discussions with programmers, Dunham said, is whether GI should completely stop authorizing VC II modules which have never been activated by a certain date, perhaps early next year.

●Current owners of VC II Plus units will not receive free upgrades if the VC II Plus security has to be changed. But GI is working on a program under which such upgrades would be "heavily subsidized" and "very attractive" to the consumer, according to Dunham.

●However, as of April 1, 1991, consumers who purchase VC II Plus modules or CCBMs when they become available, and VC II owners who receive the free CCBM upgrade, will receive one free upgrade to the first new security level, if it is necessary for a

three-year period from the date of the purchase or receipt of the original upgrade. Dunham said GI will pay for the upgrades, but acknowledged such costs are usually passed through to the consumer in some form.

●GI is "looking at our module pricing strategies" in light of the new programs it is planning, the upgrade, and the development of the CCBM, said Meltzer. He declined to elaborate, but IRD equipment manufacturers said they believed GI is planning a module price hike of $40 to $80 sometime next spring.

●The CCBMs will not be compatible with the DigiCipher video compression system GI is currently developing. Consumers wanting to upgrade to DigiCipher will have to pay for another unit, Dunham said, acknowledging the decision to upgrade to VC II Plus, which will be completed by the time compression is ready for consumer use, has been the subject of "a great deal of debate. VC II Plus/CCBM will be around for a while," Dunham said. If for no other reason than the cable industry has heavily

invested in decoders.

●GI plans to introduce an integrated satellite receiver/decoder (IRD) at a future date which will incorporate both CCBM and DigiCipher technology, much the way radios now do AM and FM transmissions. Even though DigiCipher now exists only as a computer simulation, GI plans to begin discussions with other IRD manufacturers about their interest in separate licensing agreements to build CCBM/DigiCipher IRDs.

●The much-anticipated and delayed VC II Plus module with built-in VideoPal impulse ordering device is now scheduled for production in late January and should be available to consumers by February or March. GI has not decided how to price the unit above the VC II Plus, but it will cost $15 more to add the VideoPal modem to the module. Modules with and without the VideoPal modems will be manufactured.

GI is not making decisions about the VC II data stream, upgrades and the like unilaterally, Dunham argued, and is largely responding to the programmers. "These upgrades

and decisions are programmer-driven decisions," he said. And despite the fact consumers will be forced to trade in their VC II modules at some point in order to receive programming, Dunham said, "GI is supporting that [programmer] move to higher security. This should not be construed as an equipment recall."

No decisions on how much consumers with tampered VC IIs will pay to upgrade to VC II Plus or CCBMs have been made, Dunham said, adding, "It's an issue, but it's not one of high concern at this point."

Though GI believes the VC II Plus' security "is still holding," Dunham said, the company has learned that "you can't assume there is a perfect technical solution with any technology" because "security is a degrading situation." But the company believes the CCBM is a "long-term solution to the piracy situation from the technical standpoint," he said. "You have to have the ability to upgrade the security and you have to have a way to upgrade that doesn't interrupt the industry's business." ■

FCC Says VideoCipher Encryption Acceptable

By Vincente Pasdeloup

THERE IS No need for a government-mandated encryption standard for satellite cable programming, according to a report adopted unanimously by the Federal Communications Commission last week. The agency was responding to a congressional request contained in the Satellite Home Viewer Act of 1988.

The Commission's Office of Plans and Policy found that General Instrument Corp.'s VideoCipher II is the de facto technological standard for encrypting and decoding satellite programming and that dish owners need not buy another system to receive satellite cable programming.

Furthermore, the report said the existence of a different standard could cause an additional problem in the ongoing fight against satellite signal piracy. Programmers and manufacturers would have a more difficult time battling it, the FCC said.

The FCC also reported that General Instrument's new generation of decoders, Videocipher II Plus, will not make the previous version obsolete. But it is too soon to tell if this technology is more effective in protecting programming against pirates, said Jonathan Levy of the Office of Plans and Policy.

Responding to a question from Commissioner Sherrie Marshall, Levy said the adoption of a universal standard could have a negative impact on the development of direct broadcast satellite services.

GENERAL INSTRUMENT

INSTRUMENT

Sep. 5, 88'

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FOR IMMEDIATE RELEASE

GENERAL INSTRUMENT UNVEILS PLANS FOR ADVANCED

VIDEOCIPHER II - PLUS SYSTEM, DIRECT DISTRIBUTION

OF REVOLUTIONARY, HIGH TECH "SECURITY CARD"

NASHVILLE (September 5, 1988) -- Revolutionary new high-tech
security cards and direct distribution of those cards to dealers
and consumers "are the way of the future for satellite TV" -- and
both will be part of the VideoCipher II-Plus system, an enhanced
encryption system to be introduced in June 1989, General
Instrument Corp.'s VideoCipher Division said here today.

"VideoCipher II-Plus meets tomorrow's needs for an evolving
security system technology that will help build and energize our
industry and, at the same time, enhance security," said J.
Lawrence Dunham, executive vice president and general manager of
the VideoCipher Division.

"VideoCipher II-Plus provides a path to the future. At the
same time, VideoCipher II-Plus will be fully compatible with

today's VideoCipher II system so that current owners of our descramblers will not be adversely impacted by this evolution in technology and security."

The security card, which will be inserted by consumers into integrated receiver/descramblers (IRDs), and direct distribution of VideoCipher II-Plus are directed at system security and at thwarting piracy of subscription programming signals, he said.

Two major new features of VideoCipher II-Plus focus on future growth in satellite TV. They are:

* An expansion to 256 tier bits, up from the currently available 56 tier bits, to accommodate an anticipated and significant increase in the number of subscription program services delivered to the home dish market. Tier bits are the unique, encrypted data codes used to secure subscription programming. Today, 40 programmers serve more than 400,000 TVRO households, using all available tiers of the VideoCipher II system; and,

* An increase in the "addressing rate" to allow for growth to up to 50 million TVRO households receiving subscription programming via the VideoCipher technology. Today's VideoCipher II technology has a system capacity of approximately 5 million subscribers, more than adequate to serve the estimated 2 million TVRO households and those currently authorized to receive subscription services.

Michael Meltzer, VideoCipher Division vice president of marketing and sales, said it was unusual for the division to unveil plans for VideoCipher II-Plus nine months in advance of market introduction.

"However, we felt it was important to show the industry that the technology for growth will be available, and that the technology and distribution mechanisms to enhance security will also be in place," he said.

Dunham and Meltzer announced the VideoCipher II-Plus system information at the Satellite Broadcasting and Communications Association convention here.

While introduction of the VideoCipher II-Plus system is in June 1989, Dunham stressed that the division is moving ahead immediately with technology enhancements and tests of more secure distribution systems.

The division is introducing into VideoCipher descrambler modules used by licensees a series of three technical enhancements over the next nine months. These include new firmware, incorporation of several integrated circuits onto a "chip on board" system, and a "Super Chip" that will leverage recent advancements in semiconductor technology to consolidate multiple security chips of today's system into a single, high-security integrated circuit.

The division also announced today the start of a pilot program effective September 15 to test direct distribution of VideoCipher descrambler modules to satellite TV dealers.

The pilot program will initially allow 100 dealers to purchase from the division and maintain a limited supply of VideoCipher descrambler modules for service and repair purposes.

Participating dealers will be accountable to the VideoCipher Division for information on the descrambler module.

- more -

"This test of direct distribution will be expanded rapidly to 500 dealers in mid-October and 1,000 in January if the test is successful," Meltzer said.

The accountability feature of direct distribution is viewed by industry experts as a significant weapon in fighting piracy, he said. Accountability allows a fulfillment center to ensure that descramblers modules manufactured by General Instrument or Channel Master are being used to receive subscription services, and, to gather information which could lead to legal actions against dealers and consumers if they are engaged in signal theft. (Editors: For more information on pilot program, see separate release.)

Meltzer said the designs for the VideoCipher II-Plus system focused on making the transition easy for consumers and industry participants, including licensed manufacturers, distributors and dealers.

"For the new consumer, the big change will be the security card. It will be as easy to insert into an integrated receiver/descrambler as a VCR cartridge or a compact disk," Meltzer said.

The security card, expected to be one-half-inch thick and measure 2.5 inches by 2.5 inches, will incorporate security functions currently part of the VideoCipher II system and the technical enhancements being introduced and leading to the "Super Chip."

For manufacturers, who will need a separate license to employ VideoCipher II-Plus technology, Meltzer said the design provides "the opportunity" to reduce manufacturing costs and potentially consumer prices for IRDs.

potentially consumer prices

Meltzer said design of the VideoCipher II-Plus system will remove the security features now resident in VideoCipher modules and thus should reduce manufacturing costs. In addition, some redundancies in VideoCipher II modules and current IRD circuits will also be eliminated, offering additional cost savings.

"Beginning in June, 1989, licensees of the VideoCipher II-Plus system will distribute their IRDs without descramblers. The 'security card' element of the IRD will be sold directly to dealers and consumers," Meltzer said.

Meltzer said issues related to licensing and distribution are of such significance today to manufacturers that the division is inviting all currently licensed manufacturers to an "information session" September 23 in Chicago.

For dealers, Meltzer said the transition to VideoCipher II-Plus offers the opportunity to increase margins.

"The new design keeps significant added value in the IRD so that reasonable dealer margins will remain, and dealers, if they market effectively, could also enjoy new margins on the security cards," Meltzer said.

General Instrument is the industry leader in cable TV electronics, coaxial cable and satellite encryption systems. The company's primary strategies are focused on communications systems. The company's common stock is listed on the New York, Midwest, Pacific and London stock exchanges.

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GENERAL
INSTRUMENT

VideoCipher Division
General Instrument Corporation
6262 Lusk Boulevard
San Diego CA 92121
619/455-1500
FAX 619 535-2486

February 7, 1989   *Change from standard VCII to VCII+ standard*

-7 (032") this was printed in 1988

General Instrument has been reviewing its plans for introduction of VideoCipher II-Plus technology later this year. As you know from our announcements in December, we have diligently worked to accommodate our licensed manufacturers and alleviate their major concerns related to this improved product.   *1988*

In recent weeks, a new and quite positive trend has emerged and is influencing immediate decisions regarding VideoCipher II-Plus security. The trend, of course, is the improved security outlook. The "-7" firmware has held up under assault by pirates and "Chip on Board" hardware is on schedule. In addition, the fourth quarter of 1988 showed a dramatic improvement in the ratio between new authorizations and shipments by General Instrument. In December and January, new authorizations exceeded General Instrument shipments.

Given the favorable authorization/shipments ratio, the impact of our unrelenting six-point anti-piracy program and the new federal law with its severe penalties, it appears that the TVRO environment is much more secure than it was in September   *1988* when we formally announced our plans for VideoCipher II-Plus introduction. Based on current information, we believe this more secure environment should prevail in 1989.

In this current operating environment, General Instrument remains committed to distribution of the VideoCipher II-Plus security cartridge to consumers as a means of enhancing security. In 1989, the VideoCipher Division will invest in establishing the infrastructure for direct distribution. This will include purchase of computers, software, and personnel training.

However based on the current security environment, we intend to place our direct distribution plans on "stand-by" status, as a new weapon available to fight piracy--when needed. Our stand-by, direct distribution infrastructure will be prepared to go into operation within 60 days of a serious VideoCipher II-Plus security compromise.

This decision means the following for our licensed manufacturers when VideoCipher II-Plus technology is introduced in the September time frame:

*   Direct distribution will be a capability and security feature of the VideoCipher II-Plus system and will be held on stand-by status;

*   Under the existing License and distribution methods, licensees will receive from General Instrument both the support module and the security cartridge, coupled together.

*   The basic VideoCipher II-Plus module/security cartridge remains, as you were notified last year, an enhancement to our existing technology and will not require a new license for existing licensees.

*   As a security enhancement feature, under the existing license, General Instrument will implement direct distribution of the security cartridge should the VideoCipher Division determine such distribution is necessary.

*   Because of stand-by direct distribution and the delivery to licensees of integrated security cartridges and support modules, licensees may wish to institute plans to redesign IRD back panel configurations that will permit easy consumer installation of VideoCipher II-Plus security cartridges. Specifications/dimensions for this modification are not ready. In our effort to openly communicate with licensees, please be advised that General Instrument intends to implement an IRD back panel that will allow consumer-friendly interface of VC II-Plus security cartridges.

*   Should direct distribution become necessary, licensees would purchase from General Instrument a support module and a certificate. Consumers would redeem the certificate for a security cartridge, already paid for at the time of their IRD/standalone descrambler purchase.
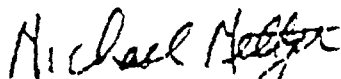
GENERAL INSTRUMENT

We view this announcement as a very positive development. The tide is turning against piracy and momentum is gathering in favor of those who are working hard to legitimately build this industry.

Should you have any questions regarding stand-by direct distribution, please call me.

Sincerely,

Michael Meltzer
Vice President
Sales and Marketing

P.

GENERAL INSTRUMENT

handwritten: from VCII to VCII+

July 13, 1989

Dear VideoCipher II Consumer Descrambler Module Licensee:

As you know the VideoCipher Division of General Instrument has been working diligently to complete the design of the VideoCipher II Plus encryption system and descrambler module providing enhanced security of programmers' signals while remaining backwards compatible with the installed base of descramblers and IRDs. At the same time, we have gathered input from various industry sources on how to introduce this new product in an orderly transition and positive manner that will allow the industry to promote and expand the home satellite TV market.

We have given you various progress reports during this development cycle. In anticipation of successful completion of the product design and field test we have enclosed a summary of the VCII Plus description and rollout plan. These highlights are intended to address the major issues raised by programmers, licensees, distributors and dealers. In the near future we expect to provide you with further information on each of the topics mentioned in this summary. However, in the interim, please feel free to contact me with any questions you have concerning these issues.

handwritten left margin: Manufacturers have to send GI's their designed IRD's

I again extend an invitation to each of you to send us your technical questions concerning the recently updated VideoCipher II Plus module and IRD interface specifications. Also, please provide a current sample of each of your licensed IRD models as requested in Ralph DeSiena's letter of June 22, 1989 so that the VideoCipher Division may conduct a no charge retest of your IRD to verify proper operation with the new VCII Plus modules.

Thank you in advance for your cooperation in ensuring a smooth rollout of this new product and helping to bring honest growth back into this exciting industry.

Sincerely,

Douglas H. Lindquist
Assistant Vice President
Commercial Sales

07DL12

GENERAL INSTRUMENT

December 6, 1990

HARVEY SMITH
Nedco, A Westburne Division
1820 Burrard Street
Vancouver, B.C.
V6J3H6

Dear Harvey,

This letter is to recap our conversation. I appreciate your concern about the VC-II Market Place. I am writing this to assure you that General Instruments will not turn off any boards, more specifically 010's, 019's, 018's & 032's until we have perfected our new Cipher Card.

As you know, this will be on our NEW PLUS MODULE. The time frame for this will be the end of 1992 and the first part of 1993. These time frames are if all goes right, thus it could be delayed even longer.

I trust this clears up your concerns. I'm looking forward to seein you in Las Vegas at the SBCA show.

HAPPY HOLIDAYS!

VIDEOCIPHER DIVISION
GENERAL INSTRUMENT CORPORATION

BY: _____

Dan Kuno
Midwestern Regional Sales Manager